**IN THE UNITED STATES DISTRICT COURT**
**FOR THE EASTERN DISTRICT OF TEXAS**
**MARSHALL DIVISION**

| | | |
|---|---|---|
| VALTRUS INNOVATIONS LTD. and KEY PATENT INNOVATIONS LTD.,<br>*Plaintiffs*,<br>v.<br>SAP AMERICA, INC. and SAP, SE,<br>*Defendants*. | §<br>§<br>§<br>§<br>§<br>§<br>§<br>§<br>§ | CIVIL ACTION NO. 2:24-CV-21-JRG<br>(Lead Case) |
| VALTRUS INNOVATIONS LTD. and KEY PATENT INNOVATIONS LTD.,<br>*Plaintiffs*,<br>v.<br>SAP AMERICA, INC. and SAP, SE,<br>*Defendants*. | §<br>§<br>§<br>§<br>§<br>§<br>§<br>§<br>§ | CIVIL ACTION NO. 2:24-CV-533-JRG<br>(Member Case) |

**MEMORANDUM CLAIM CONSTRUCTION OPINION AND ORDER**

In this patent case, Valtrus Innovations, Ltd., and Key Patent Innovations, Ltd., (together, "Valtrus") allege infringement by SAP America, Inc., and SAP SE (together, "SAP") of claims from seven patents. Compl., Dkt. No. 1. Of those patents, the parties originally presented nine disputes about scope from five patents. On March 14, 2025, the Court held a claim-construction hearing concerning those nine terms.

Since that hearing, however, Valtrus has dismissed claims related to three of the patents, Joint Stipulation of Dismissal, Dkt. No. 142, leaving only terms from U.S. Patent 6,889,244 and 7,313,575 in dispute. More recently, the parties further narrowed the number of disputes to three. Joint Notice Regarding Resolved Claim Construction Issues, Dkt. No. 164. Having considered the parties' briefing, along with arguments of counsel at the March 14 hearing, the Court resolves the final three disputes as follows.

# I. BACKGROUND

## A. U.S. Patent 6,889,244

The '244 Patent "relates to a messaging architecture wherein messages are transmitted over the interconnection fabric of a fault tolerant storage system and are stored within [that] system." '244 Patent at 1:21–24. After explaining that "distributed applications" are computer applications separated into multiple parts and hosted on different computers, the patent explains the importance of availability of the application parts. *Id.* at 1:28–32, 3:58–64. "To ensure that a distributed application has a high rate of availability, it is important to make each component that hosts the distributed application as reliable and fault-tolerant as possible." *Id.* at 3:65–4:1.

Regarding availability of stored files, the patent describes fault-tolerant storage systems as guaranteeing the availability and integrity of those files. For example, the patent describes one specific FTSS that "uses a fault-tolerant, redundant architecture that ensures there is no single point-of-failure, and has a mean time between failure (MTBF) of . . . 285 years." '244 Patent at 4:35–48.

Figure 1 (below) shows a prior-art system (10) with computer systems (12, 14, 16, 18, 20, 22), and an FTSS (24). Interconnection fabrics (26, 28) couple to the FTSS to carry file transactions to and from the computer systems. The interconnection fabrics couple the computer systems directly to the FTSS, but do not directly couple the computer systems to each other. *See generally* '244 Patent at 4:49–61. Notably, however, the interconnection fabrics don't have "persistent storage," so "[i]f a client suffers some type of error after receiving a message, the client is not able to request retransmission of the message from [the] fabric 26." *Id.* at 4:65–5:2.

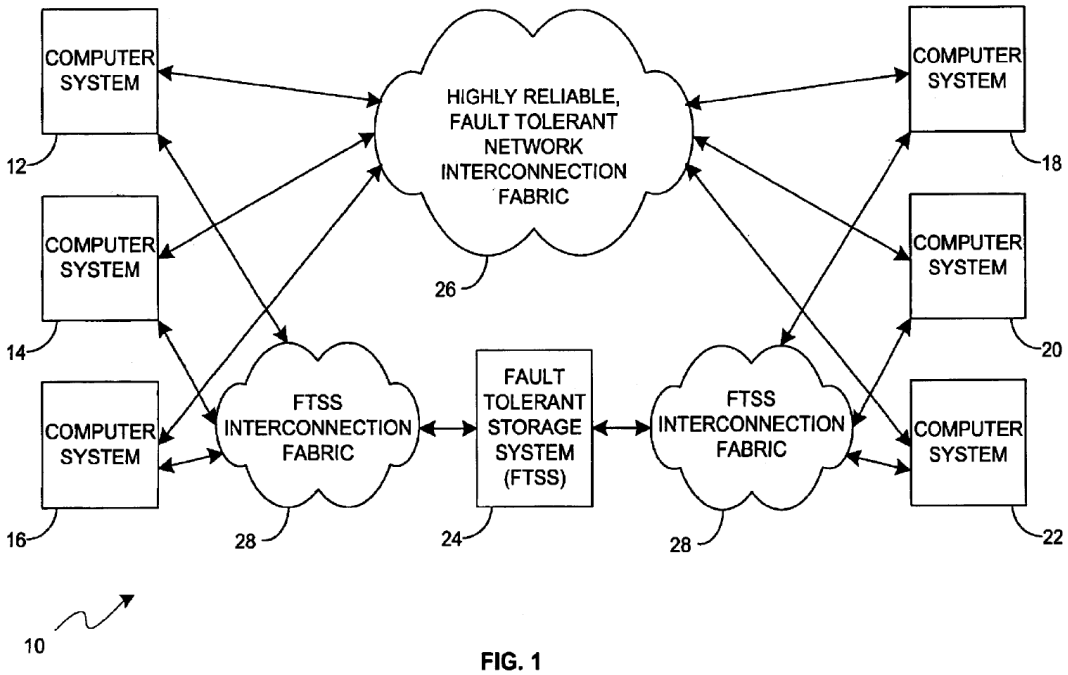


**FIG. 1**
**(PRIOR ART)**

To address this deficiency, the patent discloses the system of Figure 2 (below) as "a practical way for a customer to use the same highly reliable and fault tolerant interconnection fabric to carry both file I/O transactions and messaging traffic, and also allowing a client to request retransmission of messages." '244 Patent at 5:3–6. In Figure 2, a networked system (30) includes computer systems (32, 34, 36, 38, 40, 42), FTSS 44, and an FTSS interconnection fabric (46). The FTSS processes both file-related I/O transactions and carries message traffic using message agents. See generally id. at 6:28–54. "The highly reliable and fault tolerant nature of FTSS 44 ensures [it] can guarantee delivery of a message transmitted from a sending computer system to a destination computer system." *Id.* at 6:54–57.

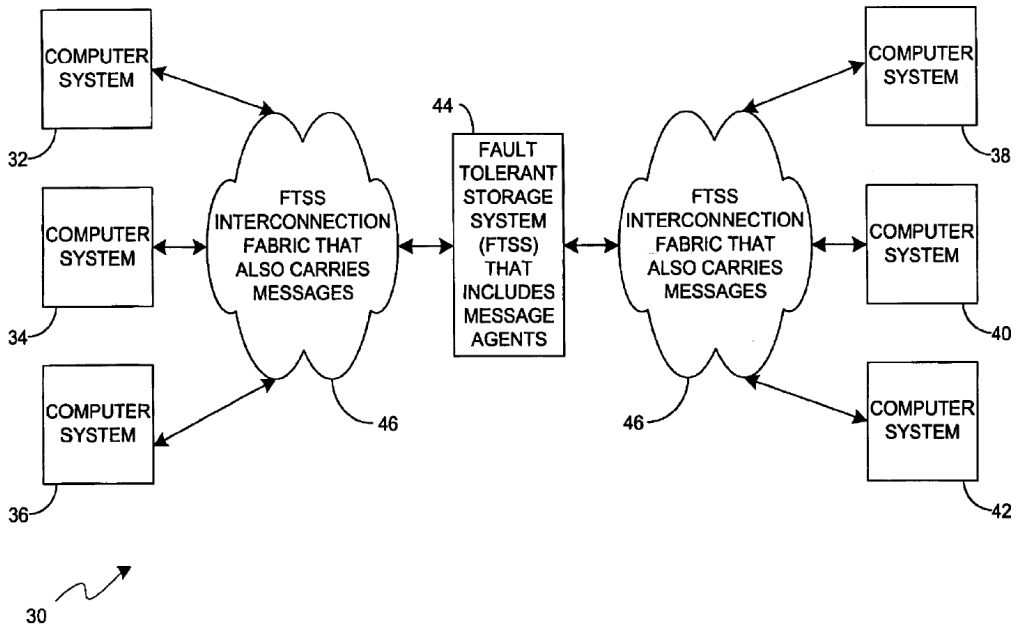


**FIG. 2 of the '244 Patent**

The parties dispute the scope of two terms from Claim 1, which recites:

> 1. A method of transmitting messages between a first node and a second node, wherein the first and second nodes are each coupled to a fault tolerant storage system (FTSS), the method comprising:
>
> transmitting a message from the first node to a communication agent in the FTSS;
>
> storing the message in a data structure in highly reliable fault-tolerant storage media of the FTSS;
>
> processing the message at the FTSS in accordance with a messaging paradigm; and
>
> transmitting the message from the FTSS to the second node.

'244 Patent at 11:60–12:4. Specifically, the parties dispute the scope of the preamble and whether the phrase "highly reliable fault-tolerant storage media" is indefinite. Dkt. No. 164-1 at 2.

### B. U.S. Patent 7,313,575

The '575 Patent relates to the problem of latency in computer systems. More specifically,

the patent addresses the goal of zero-latency enterprise (ZLE) performance, which would "eliminate latency from operations so that business events that occur anywhere in an organization can immediately trigger appropriate actions across other parts of the enterprise and beyond." '575 Patent at 1:24–27. Latency, which is "an inability to react immediately to business stimuli," contributes to reduced business performance, such as "poor customer service, missed selling opportunities, failure to address consumer fraud, insufficiency in monitoring enterprise finances, and the like." *Id.* at 1:18–23. The patent explains that, "[w]hile many industry participants have sought real-time performance, few have attained more than simple asynchronous message passing middleware." *Id.* at 1:45–47.

Key to the patent's solution to this problem is "a real time information director (RTID) that transforms data under direction of polymorphic metadata that defines a security model and data integrity rules for application to the data." '575 Patent at [57]; *see also id.* at 1:57–60. For example, Claim 1 recites:

> 1. A data services handler for execution on a computing system comprising:
>
> an interface executing on the computing system for communicating between a data store and applications that supply and consume data; and
>
> a real time information director (RTID) executing on the computing system that transforms data for supply, consumption, or both by the applications under direction of polymorphic metadata that defines a security model and data integrity rules for application to the data . . . .

*Id.* at 55:17–38. SAP challenges "polymorphic data" as indefinite.

## II. LEGAL STANDARDS

### A. Generally

"[T]he claims of a patent define the invention to which the patentee is entitled the right to exclude." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (*en banc*). As such, if the parties dispute the scope of the claims, the court must determine their meaning. *See, e.g., Verizon Servs. Corp. v. Vonage Holdings Corp.*, 503 F.3d 1295, 1317 (Fed. Cir. 2007) (Gajarsa, J., concurring in part); *see also Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 390 (1996), *aff'g,* 52 F.3d 967, 976 (Fed. Cir. 1995) (*en banc*).

Claim construction, however, "is not an obligatory exercise in redundancy." *U.S. Surgical Corp. v. Ethicon, Inc.*, 103 F.3d 1554, 1568 (Fed. Cir. 1997). Rather, "[c]laim construction is a matter of [resolving] disputed meanings and technical scope, to clarify and when necessary to explain what the patentee covered by the claims . . . ." *Id.* A court need not "repeat or restate every claim term in order to comply with the ruling that claim construction is for the court." *Id.*

When construing claims, "[t]here is a heavy presumption that claim terms are to be given their ordinary and customary meaning." *Aventis Pharm. Inc. v. Amino Chems. Ltd.,* 715 F.3d 1363, 1373 (Fed. Cir. 2013) (citing *Phillips,* 415 F.3d at 1312–13). Courts must therefore "look to the words of the claims themselves . . . to define the scope of the patented invention." *Id.* (citations omitted). The "ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, *i.e.,* as of the effective filing date of the patent application." *Phillips*, 415 F.3d at 1313. This "person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification." *Id.*

Intrinsic evidence is the primary resource for claim construction. *See Power-One, Inc. v. Artesyn Techs., Inc.*, 599 F.3d 1343, 1348 (Fed. Cir. 2010) (citing *Phillips,* 415 F.3d at 1312). For certain claim terms, "the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words." *Phillips,* 415 F.3d at 1314; *see also Medrad, Inc. v. MRI Devices Corp.*, 401 F.3d 1313, 1319 (Fed. Cir. 2005) ("We cannot look at the ordinary meaning of the term . . . in a vacuum. Rather, we must look at the ordinary meaning in the context of the written description and the prosecution history."). But for claim terms with less-apparent meanings, courts consider "those sources available to the public that show what a person of skill in the art would have understood disputed claim language to mean . . . [including] the words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art." *Phillips,* 415 F.3d at 1314.

**B. Indefiniteness**

"[A] patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention." *Nautilus, Inc. v. Biosig Instruments, Inc*., 572 U.S. 898, 901 (2014). The claims "must be precise enough to afford clear notice of what is claimed" while recognizing that "some modicum of uncertainty" is inherent due to the limitations of language. *Id.* at 908. "Indefiniteness must be proven by clear and convincing evidence." *Sonix Tech. Co. v. Publ'ns Int'l, Ltd.*, 844 F.3d 1370, 1377 (Fed. Cir. 2017).

## III. THE LEVEL OF ORDINARY SKILL IN THE ART

The level of ordinary skill in the art is the skill level of a hypothetical person who is

presumed to have known the relevant art at the time of the invention. *In re GPAC*, 57 F.3d 1573, 1579 (Fed. Cir. 1995). In resolving the appropriate level of ordinary skill, courts consider the types of and solutions to problems encountered in the art, the speed of innovation, the sophistication of the technology, and the education of workers active in the field. *Id.* Importantly, "[a] person of ordinary skill in the art is also a person of ordinary creativity, not an automaton." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007).

Here, neither party addresses the level of ordinary skill in the art in their briefing. Plaintiff's expert, however, opines a skilled artisan as one with "a B.S. in Computer Science or a related field, and 2–3 years' experience working with databases or related information systems." Farach-Colton Decl., Dkt. No. 110-16 ¶ 12. Because SAP does not challenge this level of skill, the Court adopts it for purposes of resolving the present disputes.

## IV. THE DISPUTED TERMS

### A. "the first and second nodes are each coupled to a fault tolerant storage system (FTSS)" ('244 Patent, Claim 1)

| Valtrus's Construction | SAP's Construction |
|---|---|
| Plain and ordinary meaning | Plain and ordinary meaning, where the coupling to the FTSS provides for transmitting messages by a store-and-forward method (i.e., not through a conventional computer network such as a local area network (Ethernet) or wide area network (Internet)) |

This dispute concerns prosecution-history disclaimer. According to SAP, the applicants disclaimed any embodiments of the claims that use conventional computer networks. Dkt. No. 117 at 1. In reply, Valtrus denies the record supports any "clear and unmistakable surrender of subject matter," and calls SAP's reading of the cited reference "wrong." Dkt. No. 119 at 2.

SAP's disavowal argument concerns U.S. Patent 5,815,649 (Utter). Figure 1 of Utter

(below) shows two user terminals (12(A), 12(B)) connected to each other and a fault-tolerant computer system (11) using an Ethernet network 13(A), and two other user-terminals (12(C), 12(D)) connected to the FTSS and each other over a second Ethernet network 13(B).

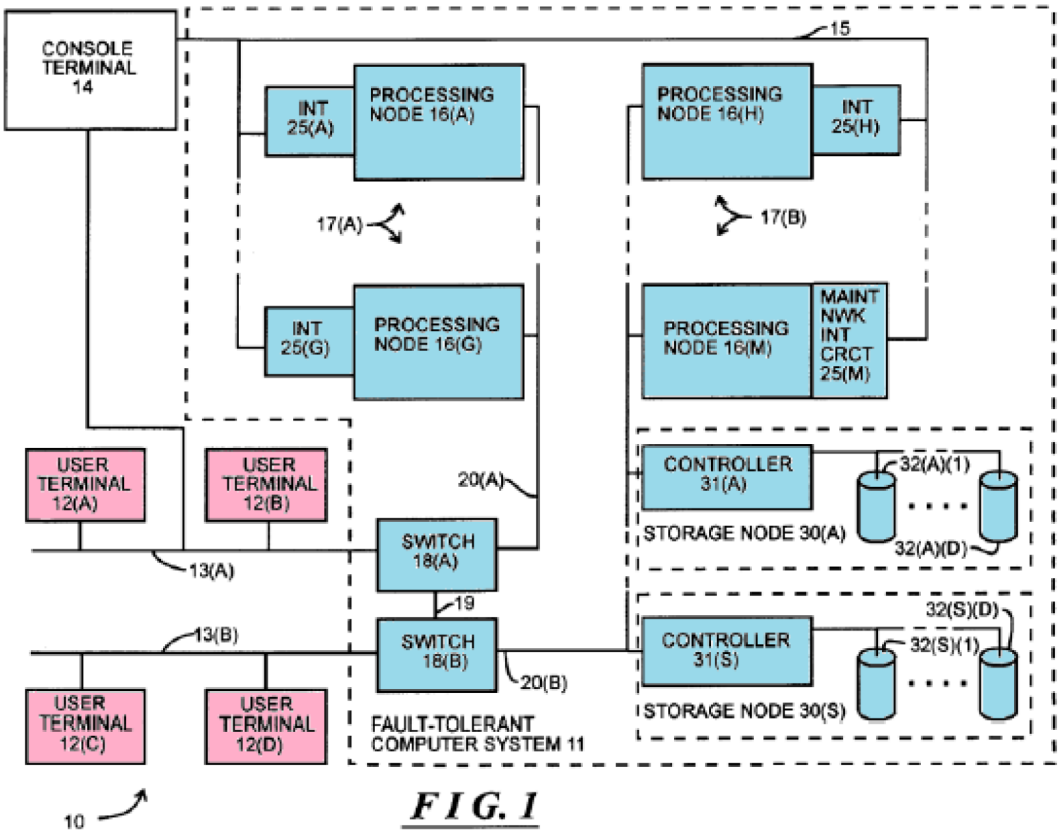


*FIG. 1*

Dkt. No. 110 at 10 (reproducing Figure 1 of Utter; coloring by Valtrus).

In response to a February 2004 Office Action, the applicants first noted the examiner's reference to Figure 1 of Utter as disclosing "a method of transmitting messages between a first node and a second node, wherein the first and second nodes are each coupled to a fault tolerant storage system (FTSS)." Remarks, Dkt. No. 117-2 at 3. They then described Figure 1 as

> show[ing] a fault-tolerant computer system, the components of which are surrounded by an outer, dashed, nearly rectangular boundary shaped somewhat like a mirror-image of Utah turned on its side. Four user terminals (12(A)–(D)) and a console terminal (14) are connected to the fault-tolerant computer system via two *conventional* Ethernet networks (13(A)(B)). Indeed, Applicants' representative

> agrees that, as shown in Figure 1, and according to Utter's disclosure, one of the four user terminals may exchange messages with another of the four user terminals via the two *conventional* Ethernet networks, and that the two user terminals are coupled through the two *conventional* Ethernet networks to a fault-tolerant computer system.

*Id.* (internal citations omitted). The applicants then asserted Utter's "communications between user terminals is conducted in an entirely conventional manner, via entirely conventional Ethernet links, and not through the FTSS, as clearly claimed in the elements of claim 1." *Id.*; *see also id.* at 17 ("[N]one of the networks that appear in Utter's disclosed system transmit messages by a store-and-forward method through an FTSS. The user terminals directly communicate with one another through one pair of Ethernets."); *id.* (asserting "Ethernet networks do not operate in a store-and-forward fashion. . . . Ethernet networks are not store-and-forward networks."). According to SAP, these remarks show "the applicant considered Utter's use of a conventional Ethernet network the determining factor." Dkt. No. 117 at 4.

The Court disagrees. SAP seeks to alter the ordinary meaning of "coupled to" in the preamble, but the applicants' remarks weren't based on any sort of argument about the nature of the coupling. Rather, the applicants' prosecution remarks refer to Utter's methodology as recited in the steps of Claim 1, which then required (and still require[1]) "storing the message in a data structure in highly reliable fault-tolerant storage media." Thus, the applicants' point of distinction was not Utter's use of a conventional Ethernet network, but Utter's lack of the store-and-forward methodology recited in the steps of Claim 1. If anything, the applicants narrowed the scope of "conventional Ethernet network" by asserting such a network does not use a store-and-forward methodology, but that is not a claim term at issue. Because SAP has not shown the applicants

[1] At the time, Claim 1 read as it eventually issued. *See* Remarks, Dkt. No. 117-2 at 2.

disclaimed the ordinary meaning of "coupled to" in the preamble, the Court will assign this term a "plain and ordinary meaning" construction.

**B. "highly reliable fault-tolerant storage media" ('244 Patent, Claim 1)**

| Valtrus's Construction | SAP's Construction |
|---|---|
| Plain and ordinary meaning. Not indefinite | Indefinite |

Each of these claims requires storing messages "in highly reliable fault-tolerant storage media of the FTSS." *See* '244 Patent at 11:66–67; *see also id.* at 12:13–14, 12:31–32. SAP contends "highly reliable" is a term of degree without any objective boundaries provided by the intrinsic evidence. Dkt. No. 117 at 5. In reply, Valtrus accuses SAP of finding ambiguity where there is none and asserts this phrase simply refers to the storage media of the FTSS. Dkt. No. 118 at 4.

A term is not indefinite if the term's meaning is fairly inferable from the patent. *See Bancorp Servs., L.L.C. v. Hartford Life Ins. Co.*, 359 F.3d 1367, 1373 (Fed. Cir. 2004) ("The failure to define [a] term is . . . not fatal, for if the meaning of the term is fairly inferable from the patent, an express definition is not necessary."). In *Bancorp*, for example, the phrase "surrender value protected investment credits" was not defined and did not have an established meaning in the industry. *Id.* at 1372. The Federal Circuit nonetheless held the phrase was definite because (1) its component terms had "well-recognized meanings, which allow the reader to infer the meaning of the entire phrase with reasonable confidence," and (2) the meaning of the phrase was "fairly inferable" from the specification and the dependent claims. *Id.* at 1372–74.

The same is true here. "Media" is a plural term, and each reference in the patent to the "storage media" of an FTSS describes storing messages first in non-volatile memory followed by immediately transferring the message to a redundant array of independent disks (RAID). For

example, the Abstract explains:

> The highly reliable and fault tolerant nature of the FTSS ensures that the FTSS can guarantee delivery of a message transmitted from a sending computer system to a destination computer system. As soon as a message is received by the FTSS from a sending computer system, the message is committed to a nonvolatile fault tolerant write cache. Thereafter, the message is written to a redundant array of independent disks (RAID) of the FTSS, and processed by one of the message agents.

'244 Patent at [57]. Thus, the Abstract ties the "highly reliable and fault-tolerant nature of the FTSS" to the combination of the nonvolatile write cache and RAID. The Summary includes the same description. *See* '244 Patent at 5:26–34. The disclosure also provides a specific example of a "typical" FTSS, which uses both nonvolatile memory and RAID. *Id.* at 6:60–67 (calling the SureStore® XP512 Disk Array "typical" and explaining "[a]s soon as a message is received . . . from a sending computer system, the message is committed to the nonvolatile write cache. . . . [and then] written to a redundant array of independent disks (RAID)"). The disclosed embodiments also use non-volatile cache and RAID. *See id.* at 8:17–20 ("Incoming file data is first committed to non-volatile write cache 98, and is then stored in RAID 100."); *id.* at 8:30–32 (referring to a RAID and nonvolatile write cache as "fault tolerant"); *id.* at 10:43–49 ("*The present invention* provides request/reply communication with additional reliability and fault tolerance by replicating each IPC message queue in FTSS 44, and storing the contents of the IPC message queues in [RAID] 100 and/or nonvolatile write cache 98 of FIG. 5." (emphasis added)).

SAP understandably focuses on the phrase "highly reliable" as a potential unbounded term of degree. Here, however, the patent's repeated disclosure of FTSSs' use of nonvolatile cache and RAID—in the Abstract, Summary, a prior-art example, and in the embodiments—persuade the Court this is *not* a term of degree, but rather a reference to the use of cache and RAID. Notably, the inventive aspect of the claims is not the FTSS itself, but the use of a FTSS for both file I/O

transfer and message transfer, so the structure of a "typical" FTSS's storage media would be expected.[2] Also of note, the patent does not disclose any specifics about the media itself—for example, failure characteristics of a particular hard drive or cache—that would make it more reliable or more fault-tolerant than "normal" media of the same type. Instead, the high reliability and fault tolerance comes from the non-volatile nature of the cache and redundant array of disks. Accordingly, the Court finds that this term is not indefinite and construes this term as "a combination of nonvolatile fault-tolerant write cache and a redundant array of independent disks (RAID)."

### C. "polymorphic metadata" ('575 Patent, Claim 1)

| Valtrus's Construction | SAP's Construction |
|---|---|
| Plain and ordinary meaning. Not indefinite | Indefinite |

SAP agrees both "polymorphic" and "metadata" are known terms in the art, but says "polymorphic metadata" is not. Dkt. No. 117 at 12. It says Valtrus fails to link the two terms in any meaningful way, and accuses Valtrus's expert of conclusory and circular reasoning. *Id.* SAP says "the specification strives to leave the term undefined and amorphous." *Id.* at 13.

According to Valtrus, a skilled artisan would have understood this term to mean "metadata defined using a polymorphic mechanism such as Java's hierarchal inheritance." Dkt. No. 110 at 15. It points to the specification's explanation that two fundamentally different shapes—a circle and a rectangle—can be assigned to different classes of shape, which the patent calls a "polymorphic representation." *Id.* at 16 (citing '575 Patent at 4:40–50).

[2] The only difference between the prior-art FTSS (24) of Figure 1 and the FTSS (44) of Figure 2 is the addition of "messaging agents" to the latter, which does not suggest a difference in storage media.

As noted *supra*, a term is not indefinite if its meaning can be reasonably inferred from the patent. *See Bancorp*, 359 F.3d at 1373 ("The failure to define [a] term is . . . not fatal, for if the meaning of the term is fairly inferable from the patent, an express definition is not necessary."). Here, as in *Bancorp*, the meanings of the term's constituent words, "metadata" and "polymorphic," were known in the art. The patent explains "[p]olymorphism enables different metadata objects to have different numbers and types of attributes, determined by class." '575 Patent at 13:5–7. That alone suggests "polymorphic metadata" is metadata that has "different numbers and types of attributes," as opposed, for example, to a two-dimensional table. *See id.* at 13:1–5 (explaining "the real time information director does not rely principally on 2-dimensional tables to represent metadata. Instead the real time information director represents metadata as polymorphic objects" (reference numbers omitted)).

The circle-and-rectangle example cited by the parties supports that interpretation:

> Polymorphic metadata is metadata that takes many forms, using polymorphism to flexibly represent different patterns economically . . . . Generally, an individual metadata class can be used to represent a different common pattern, defined with attributes that are specific to the pattern. For example, circles and rectangles can be assigned to different classes of Shape with Circle having a defining attribute called diameter, and Rectangle having defining attributes called length and width.

*Id.* at 4:36–45. In other words, the *one* defining attribute of the circle is "diameter," and the *two* defining attributes of a rectangle are length and width, but they are part of the same metadata object "shape." The patent refers to this as a "polymorphic representation." *Id.* at 4:45–46.

SAP says this circle-and-rectangle example is an example of polymorphism, which is different than "polymorphic metadata." Dkt. No. 117 at 13. Perhaps, but at a minimum those are two closely related things, with polymorphism a high-level concept and polymorphic metadata one way of implementing that concept. *See, e.g.*, '575 Patent at 4:36–37 (explaining "[p]olymorphic

metadata is metadata that takes many forms, using polymorphism"); *id.* at 13:5–7 ("Polymorphism enables different metadata objects to have different numbers and types of attributes, determined by class."); *A Portable MPI-Based Parallel Vector Template Library* (1995), Dkt. No. 110-22 (explaining "most object-oriented systems provide polymorphic collection classes that manage heterogeneous sets of objects" and "polymorphism is [traditionally] implemented through a class hierarchy using inheritance").

Based on the foregoing, a skilled artisan would be able to fairly infer the meaning of this term. Both "metadata" and "polymorphic" have meanings known to a skilled artisan, and the patent provides several passages suggesting the term's meaning. Based on those passages and the patent's definition of "metadata," '575 Patent at 4:18–19, the Court finds that this term is not indefinite and construes "polymorphic metadata" as "metadata that describes other data of different forms."

## V. CONCLUSION

| Disputed Term | The Court's Construction |
|---|---|
| "the first and second nodes are each coupled to a fault tolerant storage system (FTSS)" ('244 Patent, Claim 1) | Plain and ordinary meaning |
| "highly reliable fault-tolerant storage media" ('244 Patent, Claim 1) | "a combination of nonvolatile fault-tolerant write cache and a redundant array of independent disks (RAID)" – Not Indefinite |
| "polymorphic metadata" ('575 Patent, Claim 1) | "metadata that describes of other data of different forms" – Not Indefinite |

The Court **ORDERS** each party not to refer, directly or indirectly, to its own or any other party's claim-construction positions in the presence of the jury. Likewise, the Court **ORDERS** the parties to refrain from mentioning any part of this opinion, other than the actual positions adopted by the Court, in the presence of the jury. Neither party may take a position before the jury that

contradicts the Court's reasoning in this opinion. Any reference to claim construction proceedings is limited to informing the jury of the positions adopted by the Court.

**So ORDERED and SIGNED this 11th day of June, 2025.**

RODNEY GILSTRAP
UNITED STATES DISTRICT JUDGE